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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,566	12/09/2004	Michael Rodenberg	Sartorius-11	2649
1218	7590	05/07/2007		
CASELLA & HESPOS 274 MADISON AVENUE NEW YORK, NY 10016			EXAMINER MENON, KRISHNAN S	
			ART UNIT	PAPER NUMBER
			1723	
			MAIL DATE	DELIVERY MODE
			05/07/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/517,566

Applicant(s)

RODENBERG ET AL.

Examiner

Krishnan S. Menon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 8-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

Claims 1-5 and 8-20 are pending as amended 4/19/07.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 and 8-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "the recirculation pump (4) located on the filtrate side" in claim 1 is ambiguous. The accepted meaning of "filtrate" is what comes through the filter, whereas applicant seems to use this term to mean the feed side with respect to the pump (4). Applicant also has used the word "unfiltrate" in the claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Denk et al (WO 95/20038; US equivalent: US 6,692,786 used for the rejection) in view of Strohm et al (US 6,139,724).

Applicant's claims are for a process of filtering beverages, particularly, beer, using cross-flow filters, the process comprising periodic back-flushing of the filters using the filtrate itself, and also periodically cleaning the filters using cleaning agents between longer intervals when the filtrate flow goes below certain pre-set values. Rest of the claims recite frequency and period of cleaning cycles, the operating pressures, temperatures, the micron-sizes of filter ratings, etc.

Applicant's process (claim 1) also recites rinsing the membrane with "degassed water" after the chemical cleaning.

Denk teaches a process of filtering beer with a similar system as that of the applicant (compare figure 1 of Denk with applicant's figure 2), having periodic backflushing with filtrate and chemical cleaning with caustic soda – see column 6 line 11 – column 7 line 43 and column 3 line 23 – column 4 line 31. Figures 3-6 show the details of the cleaning cycles. The filters have pore sizes from 0.2-1  $\mu\text{m}$  – see column 9 lines 1-5. Denk also teaches CO<sub>2</sub> for emptying out the filter/filter system – column 7 lines 25-43.

Denk does not have all the details of the chemical cleaning cycle as claimed. However, such details are optimizable to maintain the flow rates and pressure drops as taught by Denk.

Strohm also teaches beer filtration using microfilters and cleaning the filters periodically with chemicals such as NaOH or KOH – see figures and column 3 line 50 – column 4 line 21 with details of flushing the system with water before and after the caustic cleaning, and then flushing the water out with CO<sub>2</sub> before filling with beer. It

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would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Strohm in the teaching of Denk because Strohm gives more details of the chemical cleaning, and also teaches using CO<sub>2</sub> to flush the system and keep the system oxygen/air free –see Strohm column 3 lines 57-61.

The references do not teach using “degassed water” for rinsing after the chemical cleaning step. However, Strohm teaches that the water is removed using CO<sub>2</sub> before filling with beer. Applicant’s purpose of using “degassed water” is to eliminate the possibility of oxygen contamination of the system. Using the CO<sub>2</sub> flush would also accomplish the same thing, and is therefore considered as an obvious equivalent, unless applicant can show otherwise with evidence. An express suggestion to substitute one equivalent component or process for another is not necessary to render such substitution obvious. In re Fout, 675 F.2d 297, 213 USPQ 532 (CCPA 1982). Avoidance of air or oxygen in the system for beer manufacturer is art-recognized – see Daud, US 4,844,932, column 9 lines 53-55 – nitrogen used instead of air to prevent any possible oxidation of wort.

As stated before, the rest of the claims recite optimizable variables. Discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art. In re Boesch and Slaney, 205 USPQ 215 (CCPA 1980); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

The use of feed pump or recirculation pump (4) in the claims as amended is taught by the reference – see figure 7 and column 8, lines 46-57. With respect to the pump (5) for filtrate back-flush in place of the pressurized system of the reference, back-wash by pressurized systems and back-wash pumps are well known in the art, and is not a patentable limitation. See references Muralidhara (US 5,252,218), Lawrence (US 5,958,243) and Yunoki (US 5,354,466).

### ***Response to Arguments***

Applicant's arguments filed 4/19/07 have been fully considered but they are not persuasive.

Argument regarding “specific use of pumps”: this is well known in the art, and is not patentable subject matter.

Arguments about steps a and b of claim 1, that until filtrate flow goes below the lower predetermined limit value: this step only describes at what point the filter is back flushed. See teaches this feature: see column 3 lines 45-67.

Regarding the “offset values” of pump (4), see column 4, lines 1-31, which teaches the modes of operation in terms of trans-membrane pressure and cross-flow velocity. Moreover, these terms used in the claims are optimizable variables for obtaining optimum performance of the filter.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Krishnan S Menon  
Primary Examiner  
Art Unit 1723  
5/2/07